



SCUOLA
NORMALE
SUPERIORE

SEMINARIO DI MATEMATICA

Lunedì 14 ottobre 2019

ore 14:00

Scuola Normale Superiore

Pisa

Aula Mancini

Jih-Hsin Cheng

(Princeton University)

Terrà un seminario dal titolo:

“Heat kernel and local index theorem for open complex manifolds with \mathbb{C}^{\ast} action”

Abstract:

For a complex manifold with \mathbb{C}^{\ast} action, we define the m -th \mathbb{C}^{\ast} Fourier-Dolbeault cohomology group and consider the m -index. By applying the method of transversal heat kernel asymptotics, we obtain a local index formula for the m -index. We can reinterpret Kawasaki's Hirzebruch-Riemann-Roch formula for a compact complex orbifold with an orbifold holomorphic line bundle by our single integral over a (smooth) complex manifold. We generalize \mathbb{C}^{\ast} action to complex semisimple Lie group G action on a compact or noncompact complex manifold. Among others, we study the nonextendability of open group action and the space of all G invariant holomorphic p -forms. Finally, in the case of two compatible holomorphic \mathbb{C}^{\ast} actions, a mirror-symmetry type isomorphism is found between two linear spaces of holomorphic forms, and the Euler characteristic associated with these spaces can be computed by our \mathbb{C}^{\ast} local index formula on the total space. This is joint work with Chin-Yu Hsiao and I-Hsun Tsai.

Tutti gli interessati sono invitati a partecipare.

Classe di Scienze